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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,177	04/29/2005	Rostyslav Ilyushenko	2733.29US01	7171

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EXAMINER	
ABOAGYE, MICHAEL	
ART UNIT	**PAPER NUMBER**
1725	

DATE MAILED: 04/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/533,177	ILYUSHENKO ET AL.	
	Examiner	Art Unit	
	Michael Aboagye	1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16 and 19-21* is/are pending in the application.

4a) Of the above claim(s) *19-21* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-16 and 19-21* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 April 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/17/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I (claims 1-16) and cancellation of claims 17 and 18 in the reply filed on March 29, 2006 is acknowledged. The traversal is made on the ground(s) that claims 19-21 of Group II calls for limitations that are linked to in the independent method claim 1. This is not found persuasive because the process of the elected Group I, while related to Group II as process and product made, have acquired a separate status in the art as indicated by their different classification. The search for the product of Group II would cause an undue burden in searching for a component made from two work-pieces welded together that are made from processes differing from that of group I. Furthermore, the special technical feature linking the two inventions, the component comprising a portion that has been fusion welded, does not provide a contribution over the prior art, and no single general inventive concept exist.

The requirement is still deemed proper and therefore made final.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 14-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to

which it pertains, or with which it is most nearly connected, to make and/or use the invention. In the instant claims, the steps of manufacturing an aircraft from aircraft component(s) are not described in the specification.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-8, and 10-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claims 1 and 10 recite the limitation "the performance" at the end of line 4 in both claims.

Claim 3 recites the limitation "the grain size number" in lines 2 and 3.

There are insufficient antecedent basis for these limitations in the claims.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1- 4 and 6-16 are under 35 U.S.C. 102(b) as being anticipated by Forrest et al. (US Patent No.6,398,883).

Forrest et al. discloses a method of welding together two metal work-pieces, the method including the following steps: providing two metal work-pieces machined from a block of an aluminum alloy or a wrought metal, preparing a portion of each work-piece by friction stir welding process resulting in grain structure refinement of the region extending from the exterior surface into the work-piece to a depth of about 6.5 mm (at least 10mm) and having grain structure finer than the grain structure of the work-piece outside that region. After the preparing step, securing the two metal work-pieces together by fastening or welding; wherein the welding process involves a fusion process that bonds the respective prepared portions of the two work-pieces, wherein said region extends into the work-piece to a depth that exceeds the depth of material that is caused to melt during the fusion welding process; wherein the welded component is used as an air craft component.

Regarding claim 2, it is noted that the method as disclosed by Forrest et al. includes a friction stir device with a probe or pin which travel through the structural work piece at a speed of about 127 mm – 720mm per minute (5- 30 inches per minute) depending on the thickness of the work pieces, it inherent for a process practiced with such a device to join two structural work-pieces having joint depth greater than 50 mm (see, abstract, figures 1, 2(A-D), 3(A-B), 16; column 1, line 10 – column 3, line 56 and column 5 line 30 – column 8, line 67).

10. Claims 1, 3, 4 and 6-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Litwinski et al. (US Patent No. 6,726,085).

Litwinski et al. discloses a method of welding together two metal work-pieces, the method including the following steps: providing two metal work-pieces machined from a block of an aluminum alloy or a wrought metal, preparing a portion of each work-piece by friction stir welding process resulting in grain structure refinement of the region extending from the exterior surface into the work-piece to a depth of about 6.5 mm (at least 10mm) and having grain structure finer than the grain structure of the work-piece outside that region. After the preparing step, securing the two metal work-pieces together by fastening or welding; wherein the welding process involves a fusion process that bonds the respective prepared portions of the two work-pieces, wherein said region extends into the work-piece to a depth that exceeds the depth of material that is caused to melt during the fusion welding process; wherein the welded component is used as an air craft component (see, abstract, column 1, line 14 – column 4, line 24, column 10, line 64 – column 11, line 11; column 15, lines 4- 58 and figure 19).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Litwinski et al. (US Patent No. 6,726,085) and Forrest et al. by (US Patent No. 6,398,883) taken individually in view of Matsumoto (JP 2001-150155, with a computer translated english version).

Litwinski et al. and Forrest et al. individually teach the claimed invention as set forth in claim 1 but do not expressly teach fusion welding process performed by means of electron beam welding process.

However Matsumoto teaches a method of welding a first member and a second member, said members being aluminum or aluminum alloy materials, wherein the fusion welding process is performed by an electron beam welding process; wherein said electron beam welding process is adapted due to easy deep penetration, high welding speed, a narrow width of heat affected zone and consequent reduction in the propensity to distortion of the weldment (see Matsumoto, drawings 1-7; abstract and paragraphs [0001]-[0008] of translation).

It would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to have adapted an electron beam welding as the form of fusion bonding process in the method of either Litwinski et al. or Forrest et al., as

taught by Matsumoto, in order to achieve easy deep penetration, high welding speed, a narrow width of heat affected zone and a reduced propensity to distortion of the weldment (see Matsumoto, abstract and paragraphs [0001]-[0008] of translation).

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. McTernan (us 6,742,697), Matsuda et al. (US 6,098,808), Walker et al. (US 6,219,916), Talwar et al. (US 6,051,325), Waldron et al. (US 6,168,067) and Gendoh et al. (US PUB. No. 2002/0158109) are also cited in PTO-892.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Aboagye whose telephone number is 571-272-8165. The examiner can normally be reached on Mon - Fri 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael Aboagye
Assistant Examiner
Art Unit 1725
04|08|2006

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PRIMARY EXAMINER
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